



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,884	01/24/2001	Robert Williams	F0685	2559

26615 7590 05/28/2004

HARRITY & SNYDER, LLP  
11240 WAPLES MILL ROAD  
SUITE 300  
FAIRFAX, VA 22030

EXAMINER

KIANERSI, MITRA

ART UNIT PAPER NUMBER

2143

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/767,884

Applicant(s)

WILLIAMS, ROBERT

Examiner

mitra kianersi

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3, 4
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2143

Claims 1-20 have been examined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by

Chang et al. (US 2003/0172147).

1. As per claim 1, Chang et al. disclose a network device connected to a host, comprising:

an address table configured to store a plurality of entries; (look-up table 50, [0035])

an address register accessible by the host and configured to store an address of one of the entries in the address table; (all registers are reset, except the PCI configuration registers. [0080])

an address table access port accessible by the host and configured to store contents of one of the entries in the address table; (each LEC represents a logical port to host system and can be placed in disabled, listening, learning, forwarding states as per the 802.1d)

spanning tree protocol standard. (NP 10 may also implement a hardware-based bridge table that allows for source address learning and filtering as well as destination address resolution. [0280])

Art Unit: 2143

table access logic configured to receive a command from the host to read one of the entries in the address table, locate the one entry in the address table in response to the command, store an address of the one entry in the address register for access by the host, and this API allows host 70 to issue a command to update the NP 10 forwarding table or bridge table. (this is a result of host 70 responding to a Unknown Destination\_Ind callback invoked by NP 10 when it receives a unicast frame that it cannot resolve. Host 70 may also use this API function to add a static entry into the forwarding table by setting up the non-volatile flag. [0282])

store contents of the one entry in the address table access port for access by the host. ("Config" stores the location of the data structure containing the LEC parameters. [0254])

2. As per claim 2, the network device wherein the table access logic is configured to receive a command from the host (receives a initialize\_Reinitialization command from host 70 and [0178]) to read a next one of the entries in the address table, locate the next entry in the address table, store an address of the next entry in the address register for access by the host, (the commands and responses are encapsulated into memory structures or messages which are written to and read from the memory buffers. Memory structures encapsulating the commands are usually written to the memory buffers by host application 72 and read from the memory buffers by DCM 74. In alternate embodiments, command memory structures may also be written by DCM 74 and read by host application Response messages are generally written by DCM 74 and read by host application 72. [0061])

and store contents of the next entry in the address table access port for access by the host. "Config" stores the location of the data structure containing the LEC parameters. [0254]

3. As per claims 3 and 17, the network device wherein when locating the next entry, the table access logic is configured to read an address from the address register (the commands and responses are encapsulated into memory

Art Unit: 2143

structures or messages which are written to and read from the memory buffers. Memory structures encapsulating the commands are usually written to the memory buffers by host application 72 and read from the memory buffers by DCM 74. In alternate embodiments, command memory structures may also be written by DCM 74 and read by host application 72. Response messages are generally written by DCM 74 and read by host application 72. [0061])

to identify a currently addressed one of the entries, read a pointer from the currently addressed entry, and locate the next entry using the pointer. (the "Addr" parameter identifies a source MAC address for a newly discovered source. The "VlanID" parameter identifies the VLAN number of the newly learnt MAC source. [0300] and the "PtrMacAddr" parameter is a pointer indicating the source MAC address which has been resolved by host 70. [0284])

4. As per claims 4 and 18, the network device wherein the table access logic is configured to receive a command from the host to read a first one of the entries in the address table locate the first entry in the address table, (receives a Initialize\_Req initialization command from host 70 and [0178]), store an address of the first entry in the address register for access by the host, and store contents of the first entry in the address table access port for access by the host. (receives a Initialize\_Req initialization command from host 70) and [0178]

5. As per claim 5, the network device wherein the entries include bin entries and heap entries, at least one of the bin entries including a pointer to one of the heap entries, at least one of the heap entries including a pointer to another one of the heap entries. (the "Config" parameter is a pointer to a data structure containing LEC configuration parameters. If "Config" is NULL, no LEC will be created but the callback response may contain the configuration of the requested LEC. [0247])

6. As per claim 6, the network device further comprising: an input data holding register configured to store data corresponding to a new entry to be created in

Art Unit: 2143

the address table or an existing one of the entries to be modified or deleted from the address table. (Memory structure 110 includes a first section 112, which stores the command type, and a second section 114, which store arguments of the corresponding command. In one embodiment, command type section 112 stores the opcode for the command. Command argument section 114 is of variable length depending on the type of command. An argument count indicating the number of arguments for the command in section 112 is typically included in section 114. [0064])

7. As per claims 7 and 14, the network device of wherein the table access logic is further configured to receive an insert table entry command from the host, find a location in the address table to create a new entry, and store the data from the input data holding register at the location in the address table. (NP 10 maintains bridge entries discovered by itself and uses the LEC\_ARP age value associated with the LEC as the value for aging these entries. This callback function allows NP 10 to inform host 70 that a MAC entry has expired and should be removed from any distribution forwarding tables. [0302])

8. As per claim 8, the network device wherein the table access logic is further configured to receive a modify table entry command from the host, locate one of the entries in the address table to modify using the data from the input data holding register, and overwrite the located entry with the data from the input data holding register. (the API allows host 70 to issue a command to NP 10 to modify an existing LEC. [0256])

9. As per claims 9, 13 and 20, the network device wherein when locating one of the entries to modify, the table access logic is configured to read a source address and virtual local area network (VLAN) identifier from the input data holding register and find one of the entries in the address table with a matching source address and VLAN identifier. (this API allows host 70 to issue a command to NP 10 to create a LANE emulation client (LEC) or to query the

Art Unit: 2143

configuration of an existing LEC. The API requests the creation of a LEC and associates the LEC with a given virtual LAN (VLAN) ID. [0245])

10. As per claim 10, the network device wherein the table access logic is further configured to receive a delete table entry command from the host, locate one of the entries in the address table to delete using the data from the input data holding register, and delete the located entry from the address table. (this API allows host 70 to issue a command to NP 10 to delete a previously created LEC. A call to this API releases all of the resources associated with the LEC including all of its virtual circuits. [0264])

11. As per claim 11, the network device wherein when locating one of the entries to delete, the table access logic is configured to read a source address and virtual local area network (VLAN) identifier from the input data holding register and find one of the entries in the address table with a matching source address and VLAN identifier. (the "NonVolatile" parameter is a boolean. When set to TRUE, the parameter indicates that the configuration is read from or stored to non-volatile memory, while set to FALSE, it indicates that the configuration is not stored or read from non-volatile memory. [0253])

12. As per claim 12, a network device connected to a host, comprising: an address table configured to store a plurality of entries; (look-up table 50, [0035]) an input data holding register configured to store data corresponding to a new entry to be created in the address table or an existing one of the entries to be modified or deleted from the address table; (this API allows host 70 to issue a command to NP 10 to delete a previously created LEC. A call to this API releases all of the resources associated with the LEC including all of its virtual circuits. [0264]) and (the "NonVolatile" parameter is a boolean. When set to TRUE, the parameter indicates that the configuration is read from or stored to non-volatile memory, while set to FALSE, it indicates that the configuration is not stored or read from non-volatile memory. [0253])

Art Unit: 2143

table access logic configured to receive at least one of a modify table entry command and a delete table entry command from the host, apply a hashing function to the data in the input data holding register, search the address table to locate one of the entries to modify or delete using the hashed data, overwrite the located entry with the data from the input data holding register when the command is the modify table entry command, and delete the located entry from the address table when the command is the delete table entry command.

(Responses to the commands, if any, received by DCM 74 may be forwarded to encode-decode module 88 which encapsulates the responses into memory structures or messages and writes the memory structures to the memory buffers 84 or 86. These encapsulated responses may then be read by encode-decode module 82 on host 70 and then forwarded to host application 72 via ULCM 78.

[0055] and

the function of encoding and decoding the command/response memory structures is performed by host application 72. This kind of configuration is generally useful for integrating NP 10 with proprietary switches. [0057]

15. As per claim 15, the network device further comprising: an address register accessible by the host and configured to store an address of one of the entries in the address table; (all registers are reset, except the PCI configuration registers. [0080])

an address table access port accessible by the host and configured to store contents of one of the entries in the address table. (receives a Initialize\_Req initialization command from host 70) and [0178]

16. As per claim 16, the network device wherein the table access logic is further configured to receive a command from the host to read one of the entries in the address table, (receives a Initialize\_Req initialization command from host 70 and [0178])



Art Unit: 2143

locate the one entry in the address table in response to the command, store an address of the one entry in the address register for access by the host, and store contents of the one entry in the address table access port for access by the host. (receives a Initialize\_Req initialization command from host 70) and [0178]

19. As per claim 19, a network device connected to a host, comprising:

an address table configured to store a plurality of entries; (look-up table 50, [0035])

an address register accessible by the host and configured to store an address of one of the entries in the address table; (all registers are reset, except the PCI configuration registers. [0080])

an address table access port accessible by the host and configured to store contents of one of the entries in the address table; (each LEC represents a logical port to host system and can be placed in disabled, listening, learning, forwarding states as per the 802.1d)

an input data holding register configured to store data for a new entry to be created in the address table or an existing one of the entries to be modified or deleted from the address table; (receives a Initialize\_Req initialization command from host 70 and [0178]), and

table access logic configured to receive a command from the host to read one of the entries in the address table, locate the one entry in the address table in response to the command, store an address of the one entry in the address register for access by the host, (receives a Initialize\_Req initialization command from host 70) and [0178] and

store contents of the one entry in the address table access port for access by the host, the table access logic being further configured to receive at least one of a modify table entry command and a delete table entry command from the host, locate one of the entries in the address table to modify or delete using the data from the input data holding register, overwrite the located entry with the data from the input data holding register when the table access logic receives

Art Unit: 2143

the modify table entry command, and delete the located entry from the address table when the table access logic receives the delete table entry command. (Memory structure 110 includes a first section 112, which stores the command type, and a second section 114, which store arguments of the corresponding command. In one embodiment, command type section 112 stores the opcode for the command. Command argument section 114 is of variable length depending on the type of command. An argument count indicating the number of arguments for the command in section 112 is typically included in section 114. [0064])

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (703) 305-4650. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2143

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi  
May/19/2004



DAVID WILEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100